

L Number	Hits	Search Text	DB	Time stamp
1	502	280/777.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/24 09:51
2	1675	74/492,493.ccls. not 280/777.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/24 11:05
9	272	280/777.ccls. and deform\$5 and (energy or absorb\$3 or absorption or impact)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/24 11:07
10	19	280/777.ccls. and deform\$5 and (energy or absorb\$3 or absorption or impact)	USOCR	2003/01/24 10:06
11	205	(74/492,493.ccls. not 280/777.ccls.) and deform\$5 and (energy or absorb\$3 or absorption or impact)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/24 10:07
12	47	(74/492,493.ccls. not 280/777.ccls.) and deform\$5 and (energy or absorb\$3 or absorption or impact)	USOCR	2003/01/24 10:07
13	0	20020167157.URPN.	USPAT	2003/01/24 10:08
14	0	20020030356.URPN.	USPAT	2003/01/24 10:15
15	7	("4838576" "5562307" "5605352" "5609364" "5706704" "5788278" "5961146").PN.	USPAT	2003/01/24 10:16
16	0	6349610.URPN.	USPAT	2003/01/24 10:17
17	402	188/371-374.ccls. not (74/492,493.ccls. or 280/777.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/24 11:06
20	30	(188/371-374.ccls. not (74/492,493.ccls. or 280/777.ccls.)) and deform\$5 and (energy or absorb\$3 or absorption or impact) and steering	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/24 12:05
21	0	(188/371-374.ccls. not (74/492,493.ccls. or 280/777.ccls.)) and deform\$5 and (energy or absorb\$3 or absorption or impact) and steering	USOCR	2003/01/24 12:05

CLIPPEDIMAGE= JP363046972A

PAT-NO: JP363046972A

DOCUMENT-IDENTIFIER: JP 63046972 A

TITLE: ENERGY ABSORBING TYPE STEERING DEVICE

PUBN-DATE: February 27, 1988

INVENTOR-INFORMATION:

NAME

TANIMOTO, MITSUTAKA

ICHIKAWA, MITSUO

YAMAGUCHI, MIKIO

ASSIGNEE-INFORMATION:

NAME

NIPPON SEIKO KK

COUNTRY

N/A

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US-CL-CURRENT: 74/492

ABSTRACT:

PURPOSE: To absorb the energy at a collision, by installing a W-shape curling wire at a steering column, and installing an energy absorbing box to a car body to absorb the energy incorporated with the curling wire.

CONSTITUTION: At a part of the peripheral surface of a steering column 12, a projection 22 with a constricted part at the intermediate position is furnished projecting in the radius direction, and at a part of the car body 20, a recess is formed in which an energy absorbing box 30 is installed. Between the projection 22 and the energy absorbing box 30, a W-shape

curling wire 40 is installed. The curling wire 40 is composed of a single and even-sized wire, and fixed to the projection 22. When the steering column 12 and a column bracket 14 are moved downward owing to a secondary collision, the projection 22 is also moved integrally, the curling wire 40 is stretched to produce a plastic deformation, and the energy is absorbed.

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